



ASSESSMENT OF COMMUNITY MEMBER'S KNOWLEDGE ON SPDC REMEDIATED LAND AND WATER BODIES IN BAYELSA STATE, NIGERIA

¹Okringbo, J. I., ²Ekweanya, N. M. and ¹Bai, E. M

¹Department of Agricultural Economics, Extension and Rural Development,
Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria

²Department of Agricultural Extension and Rural Development.

Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

Corresponding Authors' email: Okringboinemo@gmail.com

Abstract

The study examined community member's knowledge on Shell Petroleum Development Company's (SPDC) remediated land and water bodies in Bayelsa State, Nigeria. Purposive and multi-stage simple random sampling techniques were used to select a sample size of 80 community members in SPDC host communities. The data for the study were collected through the use of a well-structured questionnaire and analyzed using both descriptive and inferential statistics (ANOVA). The result showed that radio advertisement (93.8%), radio talk show (93.8%), bill board promotional campaign of SPDC's activities (87.5%), and advocacy visit by SPDC to royal fathers (87.5%), were various SPDC'S communication strategies for the promotion of environmental degradation impact management. The result further showed that SPDC convert organic wastes into manure used for remediating polluted lands (4.43). For operational spills, it pays compensation (4.16) and burn contaminated soils to destroy the crude oil in the soil (3.95). The ANOVA result showed a significant difference between knowledge of SPDC remediated land and water bodies among host communities at $P < 0.05$ level. The results therefore, show that community members in Bayelsa State had high knowledge of SPDC remediated land and water bodies. Hence, the study recommended that more effort be put in place by SPDC to educate and enlighten their host communities on remediation of polluted lands, increase their visit to royal fathers as part of its social corporate responsibilities with host communities, conduct regular meetings with men, women and youth leaders to create awareness of her environmental remediation activities.

Keywords: *Knowledge, remediated and land and water bodies*

Introduction

The environment has played a major role in the sustenance of man. Man tends to utilize his environment through the use of resources to satisfy his needs. These resources in the environment can be obtained by man through agricultural activity. Ayebatorudigimiegha (2014), stated that oil exploration over the last four decades has impacted negatively on the socio-physical environment of the Niger Delta oil-bearing communities in Bayelsa State, massively threatening the subsistent peasant agricultural economy and hence, the entire livelihood and basic survival of the people. Various harmful and toxic organic compounds introduced into the natural environment during oil exploration and extraction has changed the geo-chemical composition of the soil, river and other components of the environment, which in turn led to a drastic decline in the output of farming activities. Ibaba and Olumati (2009), noted that the oil boom has affected

the contribution of agriculture to the economy, and agriculture recorded very low average growth rates. Suffice to say; oil exploration is the major contribution of low growth rates of agricultural industry in Bayelsa State, because it has impacted negatively on crops, livestock and poultry, forest and aquatic organisms (Okringbo, 2019).

Nwachukwu and Ekanem (2016) noted that issue of hydrocarbon contamination need to be addressed in a comprehensive manner, but clean-up actions must be site-specific. In making decisions about the clean-up of groundwater, additional factors such as proximity to the community, absorption characteristics of the soil and all possible pathways must be considered, and this will require additional data to be gathered as part of the detailed clean-up planning process. Nwosu and Okringbo (2016) noted that the establishment of local nurseries would be healthy, indigenous plants will be

available to regenerate mangrove stands. Rehabilitation will focus on red mangroves along the waterfront and on white mangroves inland which have been most severely affected, and also contain the spread of invasive species (Nwachukwu and Ekanem, 2016). Adekola and Okogbule (2013) noted that SPDC has undergone three major paradigm shifts between 1960 and 2004, with a higher mode of delivery development to local communities being the justification for each paradigm shift and policy change. The Community Assistance (CA) approach placed emphasis on corporate philanthropy. It was essentially about provision of amenities (e.g., water, health care, road, etc) to host communities near SPDC exploration facilities. It was typical of the “top down” approach to development. The approach placed emphasis on the empowerment of communities in the development process, resulting in coordinated plans as communities were empowered to produce community development plans (CDPs).

The most significant predictor of the success of SPDC CDPs is that the CDPs often originate from the people. Against this backdrop, this paper seeks to examine community member's knowledge on SPDC's remediated land and water bodies in Bayelsa State, Nigeria. The specific objectives include: assessment of the awareness of the respondents on the various SPDC's communication strategies in promotion of environmental degradation impact management, and determine the knowledge of the respondents on SPDC remediated land and water bodies in the study area. The study hypothesized that there is no significant difference between the knowledge on SPDC remediated land and water bodies among host communities in Bayelsa State.

Methodology

The study was carried-out in Bayelsa State. Bayelsa State comprises eight Local Government Areas, namely: Brass, Ekeremor, Kolokuma/Opukuma, Nembe, Sagbama, Southern Ijaw, Ogbia and Yenagoa Local Government Areas. The State shares boundaries with Delta State on the North, River State on the East and the Atlantic Ocean on the West and South. Bayelsa State lies in the heaviest rainfall area in Nigeria, with heavy rain forest and short dry season from November to March (NPC, 2006). The population of the study

comprises all community members in the oil producing communities in Bayelsa State. A purposive sampling technique was used to select Ogbia Local Government area because of SPDC's oil exploration and exploitation activities in this location. Simple random sampling technique was used to select 10 community members each from eight communities: Oloibiri, Oruma, Kolo Town, Imiringi, Otusega, Emeyal, Elebele and Opume giving a sample size of 80 community members. Data for the study were collected through the use of a well-structured questionnaire. The data were analyzed using descriptive statistics and analyses of variance (ANOVA).

Model specification

The knowledge of the community members on SPDC remediated land and water bodies was estimated using a five-point rating scale. The five-point rating scale was as follows: very high knowledge = 5; high knowledge = 4, moderate knowledge = 3, low knowledge = 2, and very low knowledge = 1. A mean score of 3.0 and above imply highly knowledgeable, while a mean score of less than 3.0 was regarded as very low knowledge. The hypothesis was tested using One-way ANOVA, specified thus:

F- statistics =

$$\frac{\text{Between groups mean square (BGMS)}}{\text{Within groups mean square (WGMS)}}$$

Decision Rule: With a computed value of F-test (ANOVA) greater than the tabulated F- value of at 5% level of significance, we reject null H_0 , and accept the alternative H_0 , and vice versa. The numerator degree of freedom is given as $k-1$, and the denominator degree of freedom as $N-k$. Where N is the number of sampled respondents and k is the number of deterministic conditions or criteria (among communities under investigation).

Results and Discussion

The results in Table 1 show the distribution of the respondents according to awareness of various SPDC's communication strategies in promotion of environmental degradation impact management.

Table 1: Awareness of the community members on the various SPDC's communication strategies in promotion of environmental degradation impact management in the study area

Communication Strategies	Aware		Not aware	
	Freq.	%	Freq.	%
Radio advertisement by SPDC	75	93.8	5	7.5
Radio talk show by SPDC	75	93.8	5	6.3
Television talk show by SPDC	74	92.5	6	7.5
Bill board promotional campaign of SPDC's activities	70	87.5	10	12.5
Feature article in newspapers about SPDC	45	56.3	35	43.8
Feature article in magazine about SPDC	38	47.5	42	52.5
SPDC news letter	39	48.8	41	51.2
Advocacy visit by	70	87.5	10	12.5
SPDC to royal fathers				
Town hall meeting with men leaders	71	88.8	9	11.3
Town hall meeting with community members	71	88.8	9	11.3
Community liaison officers (CLO) of shell	52	65.0	28	35.0

Source: Field survey data, 2018

In Bayelsa State, the awareness of the community members on the various SPDC's communication strategies in promotion of environmental degradation impact management were radio advertisement (93.8%), radio talk show (93.8%), television talk show (92.5%), bill board promotional campaign of SPDC's activities (87.5%), and feature articles in newspapers about SPDC (56.3%). Others include; feature article in magazine about SPDC (47.5%), SPDC newsletter (48.8%), advocacy visit by SPDC to royal fathers (87.5%), town hall meeting with opinion leaders (88.8%), town hall meeting with community members (88.8%) and community liaison officers (CLO) of Shell (65.0%). This finding implies that community members are aware of the various SPDC communication strategies in promotion of environmental degradation impact management. This is in conformity with the findings of Palowei, Aduba, Poyeri, Tubonimi and Beatrice (2014), who noted that SPDC engage in face to face interaction with the people (3.35), hold town hall meetings with the people (2.19), communicates with the people through Radio and T.V (2.27), communication through bill boards, Banners and community newspapers (2.65), and adopts consultation/ interaction with key groups (2.41).

Result in Table 2 shows the respondents knowledge on SPDC remediated land and water bodies in Bayelsa State. The mean rating on a 5-point scale shows that SPDC converted organic wastes into manure used for remediating polluted lands (4.43), in the case of operational spills, it also pays compensation (4.16), the use of dispersant to lower the interfacial tension between the oil and water by SPDC (2.94), the use of micro-organism to reclaim soil and water environment polluted by oil spill (2.38), and SPDC burn contaminated soil to destroy the crude oil in the soil (3.95). This implies that community member's in Bayelsa State had high knowledge on SPDC remediated land and water bodies. This findings is in agreement with Oyebamiji and Adekola (2008), who noted community development as a process by which the efforts of members of a community are united with those of governmental and non-governmental organisations for a gradual and positive reconditioning process, with much reliance on local initiatives, leadership and resources improvement in the physical and social structure of the community, and general well-being of the inhabitants.

Table 2 Mean score responses of the knowledge of the community members on SPDC remediated land and water bodies

Indicators	VHK	HK	MK	LK	VL	$\sum F_x$	Mean
SPDC convert organic wastes into manure used for remediating polluted lands	61(305)	5(20)	2(6)	11(22)	1(1)	354	4.43
In the case of operational spills it also pays compensation	36(180)	29(116)	5(15)	10(20)	2(2)	333	4.16
The use of micro-organism to reclaim soil and water environment polluted by oil spill	13(65)	16(64)	23(69)	8(16)	21(21)	235	2.94
The use of dispersant to lower the interfacial tension between the oil and water by SPDC	10(50)	4(16)	19(57)	19(38)	29(29)	190	2.38
SPDC burns contaminated soil to destroy the crude oil in the soil	35(175)	19(76)	16(48)	3(6)	11(11)	316	3.95
Grand mean score							3.6

Note: \bar{x} = Mean Response of community members; RE = Remark; VH = Very high, knowledge, H = High knowledge, MK= moderate knowledge, L= Low knowledge, VL = Very low knowledge. Decision mean cut-off point= 3.0

ANOVA test result of significant difference in knowledge on SPDC remediated land and water bodies among host communities in Bayelsa State are shown in Table 3. Results show that the calculated F-value of 1.769 was significant at 10%, which was greater than the tabulated F-value of 0.063. The null hypothesis which

states that there is no significant difference between the knowledge on SPDC remediated land and water bodies among host communities in Bayelsa State was therefore rejected. This result implies that the knowledge of community members on SPDC remediated land and water varied across the State.

Table 3: ANOVA test of no significant difference between the knowledge on SPDC remediated land and water bodies among host communities in Bayelsa State

	Sum of Squares	Df	Mean Square	F_{cal}	F_{tab}
Between Groups	115.893	14	8.278	1.769	0.063
Within Groups	304.107	65	4.679		
Total	420.000	79			

Conclusion

The study shows that community members in Bayelsa State had high knowledge on SPDC's remediated land and water bodies, and were aware of the various SPDC'S communication strategies in promotion of environmental degradation impact management on remediated land and water bodies. The study therefore, recommends that more effort be made by SPDC to educate and enlighten their host community members on the use of organics to remediate polluted lands. SPDC should increase their visit to royal fathers, conduct regular meetings with men, women and youth leaders to increase awareness of her environmental remediation activities.

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